



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
29.12.1997 Bulletin 1997/52

(51) Int Cl.⁶: **G05B 19/042**

(21) Application number: **97850083.3**

(22) Date of filing: **27.05.1997**

(84) Designated Contracting States:
CH DE DK ES FI FR GB LI NL

• **Parasnis, Amalendu**
972 53 Lulea (SE)

(30) Priority: **20.06.1996 SE 9602505**

(74) Representative: **Karlsson, Berne**
Telia Research AB,
Rudsjöterrassen 2
136 80 Haninge (SE)

(71) Applicant: **TELIA AB**
123 86 Farsta (SE)

(72) Inventors:
 • **Eriksson, Anders**
972 33 Lulea (SE)

(54) **Control and supervision of electrical components**

(57) The invention relates to a system and a method at an information network which offers the user possibility to control and supervise electrical components by means of utilization of a public information network and the existing electrical power network. The invention utilizes a number of system components which by being combined in a certain way makes possible for a user to control and supervise his/her electrical components. The components consist of i.a. a user terminal, an information network, such as for instance Internet, electrical power distribution network, and a number of information managing units which manage and packet existing signals in the system in a necessary way. A user of the system consequently utilizes one to the information network connected terminal to inform the network resource about his/her wishes. The network interpretes said wishes and translates these into IS-commands (Intelligent Socket) and transmits these via the information network to STB for distribution on the ELAN, after which the addressed IS interpretes and performs necessary commands.

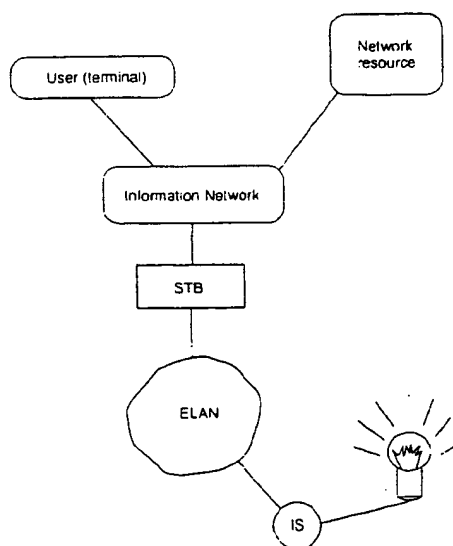


Figure 1

Description

FIELD OF THE INVENTION

The present invention relates to a system and a method for control and supervision of electrical components.

PRIOR ART

A usual way to control and supervise electrical components today is to utilize a computer which is programmed so that said components are activated or deactivated at a predetermined point of time, or the computer attends to a measurement of a specific component value at a given point of time. For control of electrical components also different kinds of timers are frequently utilized.

A problem with these control and supervision devices is that separate wiring must be made between the control/supervision devices and the component which shall be controlled respective supervised which of course will increase the costs.

Another problem is that the supervision or control devices are arranged comparatively close to the components which shall be controlled or supervised; the distance often varies between about 5 - 1000 m. This leads to that a supervisory operator must be within a very restricted area to be able to supervise said components.

The aim with the present invention consequently is to effect a system for global control and supervision of electrical components; the operator shall in principle be able to control or supervise just any electrical component irrespective of where the operator or component is.

One more aim with the present invention is to eliminate extra wiring between control/supervision devices and electrical components.

SUMMARY OF THE INVENTION

The above mentioned aims are achieved by a system and a method which is characterized in that a user of said system controls and supervises electrical components/devices connected to an electrical power distribution network by utilizing a public information network, preferably Internet, and said electrical power distribution network for transmission of instructions and data interchange.

An advantage with this is that the user can control/supervise just any electrical component irrespective of where the user or the component is. The user utilizes for instance Internet for this purpose. By utilizing the existing electrical power distribution network connected to the electrical components/devices which shall be controlled/supervised, no extra wiring is required.

Further characteristics of the present invention are given in the subclaims.

BRIEF DESCRIPTION OF THE DRAWING

The present invention now will be described more in detail with reference to the only drawing.

Figure 1 shows the construction of the control or supervision system.

DETAILED DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

The invention describes a global control and supervision of to an electrical network connected components via an information network, GSEK, and gives a description of what an implementation of the information network will look like.

By utilizing GSEK the user is offered possibility to control/supervise for instance his/her electrical components by a user-friendly interface. Below are indicated possible ways to utilize GSEK:

- * To the holiday-maker is offered for instance a customer adapted program which is executed in the network which during the absence controls lamps, radio, TV etc to simulate people at home and mislead thieves. The program of course can be reconfigured by the user during his/her absence by just any terminal.
- * The user can be offered information about the status of electrical components, Remote Status Checking (RSC), of the terminal the user is utilizing at the moment (for instance just anywhere by Internet). This will strikingly facilitate the operation and maintenance supervision of public buildings (hospitals, airports etc).
- * Managing of programable components (for instance video, start of sauna, heating of houses, heating of engines) from just any terminal (for instance Internet/WWW).

The GSEK-concept is cost-effective, because to offer GSEK there is no extra wiring needed at the user. Further, there is need for control logic at the user, since this is managed by the network resource. The only demand is that the electrical component which shall be controlled is equipped with an IS (Intelligent Socket).

By a measure with very limited influence on the electrical power distribution network the users which have access to a public information network can be offered possibility to control/supervise just any electrical components (for instance video, lamps, microwave ovens, advertising signs) connected to the electrical power distribution network. As example of possible information networks can be mentioned Internet/WWW.

To offer GSEK no extra wiring is needed because the existing electrical network is utilized as information carrier to the electrical components. The users equipment can be connected just anywhere within a defined area, which gives a certain mobility. Instruction signals

for transmission of instructions and data interchange between said terminal and said electrical components/devices.

8. Method according to patent claim 7, **characterized** 5
in that said user by means of said terminal informs
a network resource about his/her control and/or supervision wishes, after which said network resource
translates these wishes to IS-commands and transmits these over said public information network to 10
an information managing unit, STB, which STB
packets said IS-commands in suitable way for further transmission over an ELAN to an IS which performs measurements on, or controls, one to said IS
connected electrical component/device according to said IS-commands, after which said IS transmits 15
network and/or control information via said ELAN to
said STB for further transport via said public information network to said user.

20

25

30

35

40

45

50

55

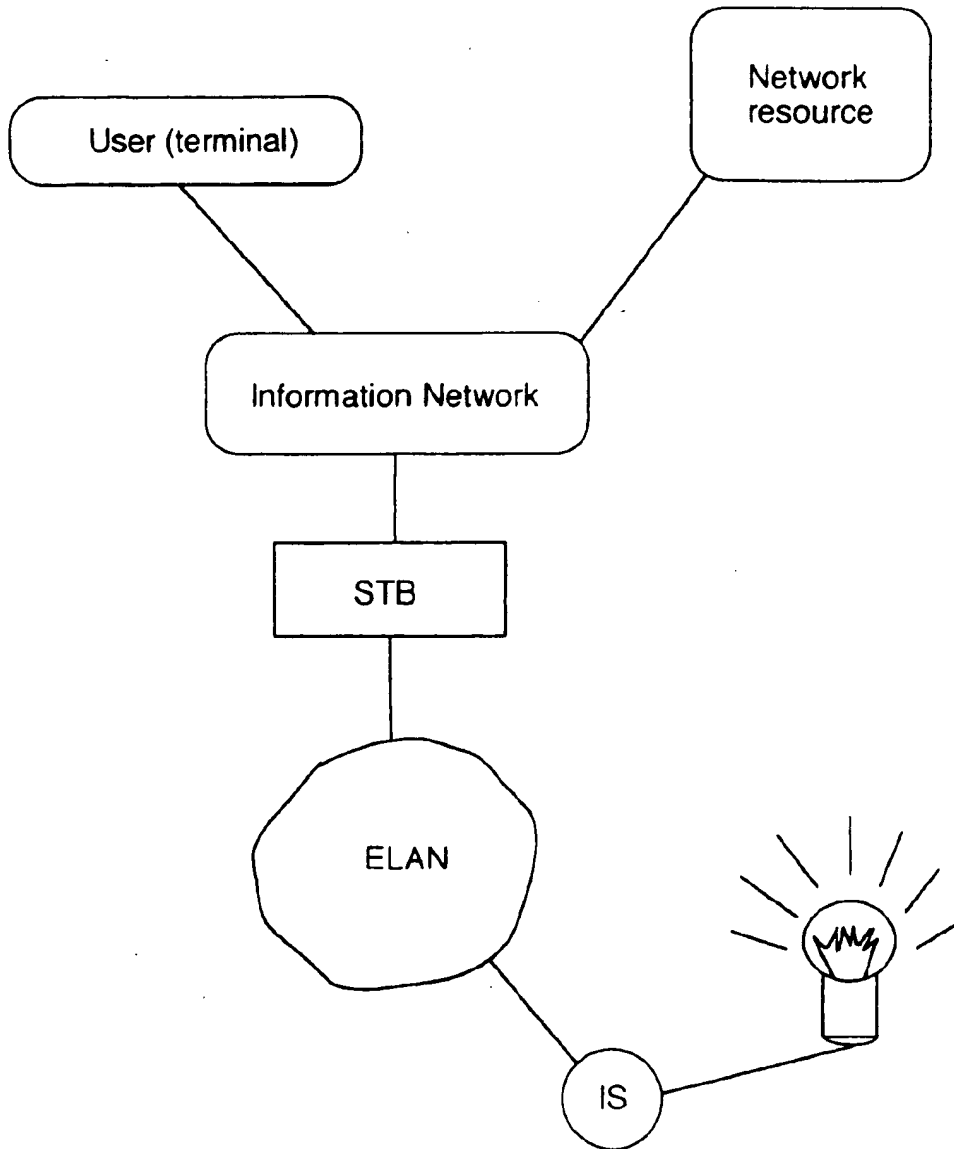


Figure 1



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 85 0083

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	GB 2 286 903 A (SANYO ELECTRIC CO) 30 August 1995 * page 12, line 13 - page 17, line 2; figures 1,2 *	1,3-8	G05B19/042 H04L12/28
Y	---	2	
Y	EP 0 602 787 A (CANON INFORMATION SYST INC) 22 June 1994 * the whole document *	2	
A	---	7,8	
X	FR 2 660 781 A (ALCATEL BUSINESS SYSTEMS) 11 October 1991 * the whole document *	1,3-8	
X	EP 0 429 056 A (SANYO ELECTRIC CO) 29 May 1991 * page 4, line 25 - page 5, line 42 * * page 8, line 28 - page 9, line 53 * * page 15, line 9 - line 30; figures 1-11 *	1,7	
A	PATENT ABSTRACTS OF JAPAN vol. 018, no. 549 (E-1618), 19 October 1994 & JP 06 197132 A (KAWASAKI STEEL CORP), 15 July 1994, * abstract *	1,7,8	G05B H04L
A	DE 38 42 467 A (MURATA MACHINERY LTD) 29 June 1989	1,4,7	
A	WO 94 28635 A (KISS JOZSEF) 8 December 1994	1,4,7	

	-/--		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 September 1997	Examiner Hauser, L
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention F : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : technological background O : non-written disclosure P : intermediate document & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

EPO FORM 1503 (01/97) (P04/00)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 85 0083

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	CORCORAN P M ET AL: "A REMOTE ELECTRONIC OBJECT EMULATION SYSTEM FOR HOME BUS APPLICATIONS" IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, vol. 40, no. 3, August 1994, NEW YORK, NY, US, pages 405-410, XP000471200 * page 405 - page 410 * -----	1,7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		12 September 1997	Hauser, L
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPF FORM 150 (12.92) (F04/01)